

SCENARIO CARDS

Read and analyze these scenarios, considering how your food web could be affected. Record your analysis in the Food Web Impacts handout.

<p>SCENARIO:</p> <p>A ranch owner gets a conservation easement (compensation for not selling their land for development) for a significant portion of their land.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ Florida’s 47,500 farms and ranches utilize 9.7 million acres. ○ A male panther can make a territory more than 200 to 250 square miles in size. ○ Florida’s Wildlife Corridor encompasses nearly 18 million acres, including almost 10 million acres of protected conservation lands, and 8 million acres make up the unprotected lands that link the protected areas where animals are free to roam. ○ Conservation easements provide financial alternatives to selling ranch land to developers. 	<p>SCENARIO:</p> <p>Rising sea levels and storm surges increase the salinity of groundwater.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ When plants are stressed by salinization, they are more susceptible to mortality. ○ In a grassland diversity experiment, researchers showed that high plant diversity results in an increased number of herbivores, or primary consumers. ○ Destruction of forests to build neighborhoods, shopping malls, etc. can result in increased erosion and flooding, because the intricate root systems that once held the soil in place and absorbed excess water are no longer present to provide natural stabilization and drainage.
<p>SCENARIO:</p> <p>A major highway is built.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ According to the Florida Wildlife Commission: <ul style="list-style-type: none"> • Vehicle collisions account for 59% of Florida panther deaths; and • 75% of a panther’s diet is composed of wild hog, white-tailed deer, and raccoons. ○ Florida drivers saw an estimated 30% increase in animal collision claims in 2021 (deer, armadillo, raccoon, panther, black bear). ○ Building roads and highways can lead to habitat fragmentation. This can disrupt wildlife movement, lead to isolated populations, and hinder the flow of genetic diversity among different parts of the ecosystem. 	<p>SCENARIO:</p> <p>The local deer population is hunted to extinction.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ Deer are the primary hosts for adult black-legged ticks and are an important tick transport mechanism. ○ Florida panthers are the leading cause of mortality for white-tailed deer in southwest Florida. ○ Research reveals regular predation on deer by alligators greater than 1.8 meters in length. ○ Study shows that white-tailed deer can help forests regrow after being used for agricultural purposes by dispersing the seeds of plants, such as forest herbs. They do this by eating and later defecating these seeds, resulting in these seeds traveling long distances.



<p>SCENARIO:</p> <p>In July of 2018, the Florida Department of Agriculture and Consumer Services (FDACS) started requiring a permit to harvest and sell saw palmetto berries in the state.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ Saw palmetto flowers are insect-pollinated and are used extensively by honey bees. ○ Black bears, white-tailed deer, and feral hogs eat the fruits of saw palmetto. ○ Saw palmetto flowers attract more than 300 species of pollinators. 	<p>SCENARIO:</p> <p>A county ordinance passes to protect all live oak trees over a certain size from being cut down by developers.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ Live oaks serve as habitats and food sources for hundreds of plants and animals, including mosses, ferns, lichens, squirrels, and moth and butterfly larvae. ○ Live oaks can store and sequester 92 pounds of carbon a year. ○ A study found that a 4°C increase (caused by increased greenhouse gasses, such as carbon dioxide), reduced energy transfer in aquatic food webs by up to 56% and ultimately led to a reduction in overall biomass.
<p>SCENARIO:</p> <p>The longleaf pine habitat that was virtually destroyed by logging (97% reduction) is undergoing significant restoration throughout Florida.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ Longleaf pine forests are home to one of the most endangered bird species, the grasshopper sparrow. ○ Longleaf pine forests support clean water by filtering and purifying rainwater, reducing erosion, controlling flooding, recharging aquifers, and maintaining watershed health, while also providing essential habitat for a variety of species. 	<p>SCENARIO:</p> <p>Wilderness preserves periodically facilitate prescribed fires or controlled burns.</p> <p>RESEARCH:</p> <ul style="list-style-type: none"> ○ Lightning causes wildfires that can burn out of control and destroy large swaths of habitat for many animals. ○ Fire has been linked to improved health of palmetto flatwoods.

